Chapter 9: Glossary and Acronyms

Glossary

The words below are defined for the reader as they are used in this EIS. A list of acronyms and abbreviations follows.

1994-1998 Biological Opinion — The strategy that modifies Current Practice Operations (see below) to reflect the 1994-1998 Biological Opinion by NMFS to meet the requirements of ESA and to avoid jeopardy to listed salmon stocks. This opinion is being updated in 1995.

AC — (see Alternating current)

aMW — (see Average megawatts)

Acquisition — The gain of a power resource, including demand-side and supply-side categories, in the form of energy or capacity. The term is commonly used by BPA to distinguish acquisition from ownership of a project and its facilities, from which BPA is prohibited by law.

Air basins — Defined areas which generally confine the air-borne pollutants produced within them. Air pollutants tend to circulate and mix together within a basin.

Alternating current (AC) — Term applied to an electric current or voltage that reverses its direction of flow at regular intervals and has alternately positive and negative values, the average value of which (over a period of time) is zero.

Anadromous fish — Species that migrate downriver to the ocean to mature, then return upstream to spawn.

Availability factor — Ratio of the amount of time a resource is capable of providing service to the amount of time the resource is actually in service over a given period.

Average megawatts (aMW) — The average amount of energy (number of megawatts) supplied or demanded over a specified period of time.

Baseload — In a demand sense, a load that varies only slightly in level over a specified time period. In a supply sense, a plant that operates most efficiently at a relatively constant level of generation.

BC Hydro — The British Columbia Hydro and Power Authority. This Crown corporation was formed in 1962 following the merger of an expropriated private utility and the BC Power Commission.

Broker — As used in this EIS, an energy broker is an entity that links buyers and sellers to complete wholesale energy transactions. In contrast to a marketer (see glossary entry), a broker does not take title to the energy, but only helps define and develop transactions and identify buyers and sellers.

Canadian Entitlement — The Canadian Entitlement is Canada's 50-percent share of the downstream power benefits of Canada's three large storage dams, Duncan, Keenleyside, and Mica. These dams were built as part of the Columbia River Treaty. Canada offered the rights to this Entitlement for sale in the United States for an agreed upon period of 30 years, beginning with the operational dates of the storage project dams.

Capacity — The amount of power that can be produced by a generator or carried by a transmission facility at any instant. Also, the service whereby one utility delivers firm energy during another utility's period of peak usage with return made during the second utility's off-peak periods; compensation for this service may be with money, energy, or other services.

Capacity/energy exchange — A transaction in which one utility provides another with capacity service in exchange for additional amounts of firm energy (exchange energy) usually during off-peak hours or money under specified conditions.

Capacity factor — Ratio of the average generation of a resource to its rated capacity over a given period of time.

Capital costs — The costs to construct a power plant, including the costs of materials, permits, and interest on borrowing.

Cogeneration — The generation of power in conjunction with (usually) an industrial process, using waste heat from one process to fuel the other.

Columbia River Treaty — A treaty signed by the United States and Canada on September 16, 1964, for joint development of the Columbia River. Under the Treaty, Canada built three large storage dams on the upper reaches of the Columbia River, which originates in Canada: Duncan, Keenleyside, and Mica.

Competitiveness Project — A process engaged in by BPA to review its internal structure and plan its activities to become more competitive. One of the central concepts of the process is to operate more like a business and less like a bureaucracy.

Coordination Act Report Operation — A strategy for operation of the FCRPS suggested by the USFWS through the Coordination Act and incorporated in the COE's 1993 Supplemental EIS. It was a forerunner of DFOP (see below).

Critical Period — The portion of the historical stream flow of record for the Columbia River system during which the least amount of electrical energy can be generated by drafting the reservoirs according to seasonal power demands. Critical period is a fundamental planning concept used to determine annual firm energy load carrying capability for the hydro system.

Cultural resources — The nonrenewable evidence of human occupation or activity as seen in any district, site, building, structure, artifact, ruin, object, work of art, architecture, or natural feature that was important in human history at the national, state, or local level.

Current Practice Operations

The set of operating requirements applied to the Federal hydro system that manage flows and elevations at 14 projects in the Columbia and Snake River Basins. It is a strategy for operation to meet the multiple purposes of the river system, such as anadromous fish, resident fish, wildlife, flood control, irrigation, navigation, power, cultural resources, water quality, and recreation. It represents the "current" method of operation. It was defined in the COE's 1993 Supplemental EIS and through the 1993 ESA consultation.

Demand

The level of electric energy, in kilowatts or megawatts, that is needed at any given time.

Detailed Fishery Operating Plan (DFOP)

DFOP represents a strategy of operation suggested by the state fisheries agencies and Native American tribes in 1994 as an alternative to current operations of the Federal hydro system to assist anadromous fish. It includes high flow augmentation for anadromous fish, drawdown below normal operating pool levels at Lower Snake River projects, and high spill during the spring and summer.

Direct current (DC)

Term applied to an electric current or voltage which may have pulsating characteristics, but which does not reverse direction at regular intervals.

Direct-service industries (DSIs)

Industrial customers, primarily aluminum smelters, that buy power directly from BPA at relatively high voltages.

Dispatch

The monitoring and regulation of an electrical system to provide coordination; or the sequence by which electrical generating resources are called upon to generate power to serve changing amounts of load.

Dispatchability

The ability to adjust the generation of an electrical generating facility to meet changes in load.

Displacement

The substitution of less-expensive energy (usually hydroelectric energy transmitted from the Pacific Northwest or Canada) for more expensive thermal energy produced in California. Such displacement means that the thermal plants may reduce or shut down their production, saving money and often reducing air pollution as well.

Dissolved gas concentrations

The amount of chemicals normally occurring as gases, such as nitrogen and oxygen, which are held in solution in water, expressed in units such as milligrams of the gas per liter of liquid.

Double-circuit

The placing of two separate electrical circuits on the same row of towers. For alternating current, each circuit consists of three separate conductors or bundles of conductors.

Economy energy

Nonfirm energy that can be generated on a partially loaded generating unit, or purchases of energy, at a price less than decremental cost. Economy energy is unconditionally interruptible.

Endangered

A plant or animal species that is in danger of extinction throughout all or a significant portion of its range because its habitat is threatened with destruction, drastic modification, or severe curtailment, or because of overexploitation, disease, predation, or other factors; Federally endangered species are officially designated by the U.S. Fish and Wildlife Service and published in the *Federal Register*.

Energy

The ability to produce electrical power over a period of time—expressed in kilowatt-hours.

Energy surplus

A condition in which a utility system can supply more energy than is demanded; the energy may be nonfirm, due to water conditions, or firm, due to excess generating capability.

Hydroelectric With reference to a power system, the production of electric power through use of the gravitational force of falling water.

IOU (see Investor-owned utility)

ISW (see Inland Southwest)

Independent power producers (IPPs) Non-utility producers of electricity who operate generation plants under the 1978 Public Utilities Regulatory Policy Act of 1978 (PURPA). Many independent power producers are cogenerators who produce power as well as steam or heat for their own use and sell the extra power to their local utilities.

Inland Southwest (ISW) For the purposes of this EIS, the States of Nevada, Arizona, Utah, and New Mexico.

Installed cost Coomplete construction costs for a facility, including interest during construction.

Integrated System for Analysis of Acquisitions (ISAAC) A computer model used by BPA and the Northwest Power Planning Council for analysis of resource acquisitions.

Interruptibility The extent to which the flow of power can be stopped for a given period of time. By agreement, the supply of interruptible power can be shut off to a customer on relatively short (hours or a few days') notice.

Intertie A transmission line or system of lines permitting a flow of energy between major power systems. BPA has several interties, both AC and DC, connecting the Pacific Northwest to the Southwest.

Intertie access The assigned right to send a defined amount of electric power at a certain time over the high-voltage line system called the Pacific Northwest-Pacific Southwest Intertie.

Investor-owned utility (IOU) A privately owned utility whose programs are financed by private (nongovernment) investors in the utility's stocks and bonds. (In contrast to publicly owned utilities.)

Kilowatt-hour (kWh) The common unit of electric energy equal to 1 kilowatt of power supplied to or taken from an electric circuit for 1 hour. A kilowatt equals 1,000 watts.

Least-cost mix of resources The combination of generating (including conservation) resources that would meet a given amount of load at a given time or for a given period most economically.

Levelized Of costs, a method of calculating equal, periodic payments or receipts from unequal cost data for the same time period, considering the time value of money.

Load The amount of electric power or energy delivered or required at any specified point or points on a system. Load originates primarily at the energy-consuming equipment of the customers.

Load growth Increase in demand for electricity.

Load management Methods or programs used by utilities or building and facility managers to reduce, reshape, or redistribute electrical loads.

Load/resource balance The point at which the demand for electricity matches or balances the amount and type of resources available to serve that demand.

Long-Term Intertie Access Policy (LTIAP) The policy developed by BPA to allocate use of the Federal portion of the Intertie for the long-term, an indefinite period that would at least encompass long-term power sales (up to 20 years) and long-term transmission contracts.

Long-term transmission contracts — Contracts between BPA and other entities for the use of the Federal transmission system, including the Intertie, for 20 years.

Low-water years — Years in which less water than usual is received in a river system producing power from water flow. This is usually a consequence of reduced rain/snowfall over the fall and winter months.

MW — (see Megawatt)

Marginal energy costs — For a generating resource, the cost to produce one more kilowatt-hour of electricity.

Marketer — As used in this EIS, a marketer is an entity that purchases and sells wholesale firm and/or nonfirm energy on the open market. In contrast to brokers (see glossary entry), marketers take title to the energy.

Maximum Sustainable Revenue — The point at which an increase in rates will not increase revenues because the potential increase in revenues from a higher price is affected by load loss as customers leave.

Megawatt (MW) — A megawatt is 1 million watts, an electrical unit of power.

Mill — A tenth of one cent. A thousand mills equals one dollar. The cost of electricity is often expressed in mills per kilowatt-hour.

Nominal dollars — For economic analysis, dollars in the year specified, not adjusted for the effects of inflation or the time value of money.

Nonfirm energy sales — Sales of electricity that are not guaranteed, but are interruptible under specified conditions.

Nonfirm access — Use of the Intertie to transport sales of nonfirm energy.

Nonfirm energy — Energy produced by the hydropower system that is available when water conditions are better than critical period water flows and after reservoir refill is assured. Nonfirm energy is available in varying amounts depending upon season and weather conditions. Nonfirm energy is made available or supplied by BPA to a purchaser under an arrangement that does not have the guaranteed continuous availability of firm power. (See "Critical Period.")

Non-Treaty Storage Agreement (NTSA) — Three storage dams were built under the Canadian Treaty—Mica, Duncan, and Arrow (Keenleyside). These dams together provide more storage than is required under the Columbia River Treaty. This extra storage space was not covered by the Treaty. In 1983, a short-term (10-year) agreement was worked out on this issue; recently (November 1990) a new agreement was reached on how to share the extra several million acre-feet.

Off-peak hours — Period of relatively low system demand for electrical energy, as specified by the supplier (such as the middle of the night).

PF rate — (see Priority Firm rate)

PNW — (see Pacific Northwest)

Pacific Northwest (PNW) — According to the 1980 Northwest Power Act, the Pacific Northwest comprises Oregon, Washington, Idaho, and Montana west of the Continental Divide, as well as portions of Nevada, Utah, and Wyoming that are within the Columbia-Snake River Basin. The Pacific Northwest also includes any contiguous areas not more than 75 miles from the region defined above that are part of the service area of rural electric cooperative customers served by BPA on the effective date of the Act whose distribution system serves both within and without the region.

Pacific Northwest Coordination Agreement (PNCA)
An agreement between Federal and non-Federal owners of hydropower generation on the Columbia River system. This agreement governs the seasonal release of stored water to obtain the maximum usable energy, subject to other uses.

Pacific Northwest Electric Power Planning and Conservation Act
In December 1980, Congress passed this Act, Public Law 96-501 (referred to as the Northwest Power Act). This Act authorized the four Pacific Northwest States—Idaho, Montana, Oregon, and Washington—to enter into an interstate compact for the purpose of long-range planning and protection of shared resources. As a result of the Act, each of the four States passed enabling legislation to create the Pacific Northwest Electric Power Planning and Conservation Council in April 1981.

Pacific Northwest Electric Power Planning and Conservation Council (Council)
A council established by the Pacific Northwest Electric Power Planning and Conservation Act in 1981 made up of two voting representatives from each Northwest State—Washington, Oregon, Idaho, and Montana. The Council is charged with planning for power resources and enhancement of fish and wildlife resources in the region.

Northwest Power Act
(see Pacific Northwest Electric Power Planning and Conservation Act)

Pacific Southwest (PSW)
In this EIS, PSW refers to California and the states of the Inland Southwest (Nevada, Arizona, Utah, and New Mexico).

Peak energy
The amount of energy (in megawatt-hours) used during a peak load period.

Peak loads
The maximum electrical demand for power in a stated period of time. It may be the maximum instantaneous load or the maximum average load within a designated interval of the stated period of time.

Point of delivery (POD)
The point where power is transferred from one system to another.

Power Plan
A 20-year power plan developed by the Pacific Northwest Electric Power Planning and Conservation Council. In the Plan, the Council proposed a comprehensive set of actions and projects to be undertaken to assure the region of adequate power resources, giving due consideration to conservation and fish and wildlife needs.

Priority Firm (PF) rate
The priority firm (PF) rate schedule is for sale of firm power to be used within the Pacific Northwest by public bodies, cooperatives, Federal agencies, and IOUs participating in the residential and small farm exchange under Section 5(C) of the Pacific Northwest Power Act.

Record of Decision
The document notifying the public of a decision taken on a power project, together with the reasons for the choices entering into that decision. The Record of Decision is published in the *Federal Register*.

Reliability level
For a power system, a measure of the degree of certainty that the system will continue operation for a specified period of time.

Renewable resource
A resource that uses solar, wind, water (hydro), geothermal, biomass, or similar sources of energy, and is used either for electric power generation or for reducing the electric power requirements of a customer.

Reservoir elevations
The various levels reached by water stored behind a dam.

Resident fish
Fish species that reside in fresh water during their entire life cycle.

Residential Energy Exchange
A rate mechanism whereby BPA equalizes, at the wholesale level, the rate paid by residential and small farm consumers of IOUs with the rates charged the publicly owned utilities.

Resource mix The different types of resources used to generate power (e.g., hydroelectric, thermal, etc.) within a given area or for a given utility.

Return energy The energy that is returned to a utility, equaling the amount of energy previously transmitted, under the terms of capacity sales and capacity energy contracts.

Rivers Study Data Base Classification of the Pacific Northwest river resources. Stream resource categories evaluated include anadromous fish, resident fish, wildlife, natural features, recreation, cultural features (Indian, historic, and archaeological resources, etc.) and institutional constraints. Now maintained as part of the Northwest Environmental Data Base (NED).

SAM (See System Analysis Model)

Scoping The definition of the range of issues requiring examination in studying the environmental effects of a proposed action. Scoping generally takes place through public consultation with interested individuals and groups, as well as with agencies with jurisdictions over parts of the project area or resources in that area. Scoping is mandated by Council on Environmental Quality regulations.

Secondary power The excess above firm power to be furnished to a customer when, as, and if available.

Secondary revenues Revenues received from sales of secondary energy, which is the energy produced in excess of firm power due to favorable water conditions.

Secondary sales Surplus power, both firm and nonfirm, in the Pacific Northwest that is available for sale to the Pacific Southwest.

Shaping The scheduling and operation of generating resources to meet load of changing levels. Load shaping on a hydro system usually involves the adjustment of storage releases so that generation and load are continuously in balance.

Simulation The representation of an actual system by analogous characteristics of some device easier to construct, modify, or understand, or by mathematical equations.

Smolt A juvenile salmon or steelhead that is migrating to the ocean and is in a physiological state to transition from fresh to salt water.

Spill (forced) Water for which there is not storage capability in the system reservoirs and which could not be used for power production because the resulting flows would exceed turbine capacity.

Spill (inadvertent/ overgeneration) An amount of water which could have been used to generate electricity but was not because of lack of available market and inability to store for later use.

Spill (programmed or planned) Water intentionally passed through a hydroelectric project without producing electricity. This is usually done for fisheries mitigation proposes.

Surplus capacity Amount of electrical capacity above the amount needed to meet the current load requirements of BPA customers.

Surplus energy Generally energy generated that is beyond the immediate needs of the producing system. Specifically for BPA, firm or nonfirm electric energy generated at Federal hydroelectric projects that would otherwise be wasted if there was not a market for the energy.

Surplus firm energy Energy that can be generated and guaranteed to be provided, but is excess to demand.

Surplus firm power — Power that can be provided on a guaranteed basis, that is excess to system demand, and that can be provided in an agreed upon shape.

Surplus nonfirm energy — An excess of interruptible energy that is available due to water conditions better than critical.

Surplus peaking capacity — Electric peaking capacity for which there is no demand in the Pacific Northwest at the rate established for the disposition of such capacity.

System Analysis Model (SAM) — A computer model that simulates the full operation of the existing Pacific Northwest hydro system under various specified conditions.

System Operation Review (SOR) — A public involvement process conducted by three Federal agencies—BPA, the Bureau of Reclamation, and the Corps of Engineers—who are concerned with the operation and use of the Federal Columbia River Power System (FCRPS). Key events affecting the outcome of the SOR are the pending expiration in 2003 of the Coordination Agreement among U.S. parties who operate the U.S. dams in the FCRPS, and the end of the sale period of the Canadian Entitlement, which is part of the Columbia River Treaty that allocated Canada's firm power benefits from the Treaty to the U.S.

TSP — (see Total suspended particulates)

Thermal resources — Generating plants that convert heat energy into electric energy. Coal-, oil-, and gas-fired power plants and nuclear power plants are common thermal resources.

Total suspended particulates (TSP) — An air pollution term referring to all matter contained in a sample of air which is in solid or liquid form regardless of its particle size or chemical composition.

Transmission grid — An interconnected system of electrical transmission lines and associated equipment for the transfer of electric energy in bulk between points of supply and points of demand.

Turbidity — A measure of the optical clarity of water, which depends on the light scattering and absorption characteristics of both suspended and dissolved material in the water.

Wheeling — The use of the transmission and distribution facilities of one system to transmit power of and for another system.

Acronyms and Abbreviations

AC	Alternating current
aMW	Average megawatts
ASC	Average System Cost
BC	British Columbia
BC Hydro	British Columbia Hydro and Power Authority
BLM	Bureau of Land Management
BOR	Bureau of Reclamation
BP EIS	Business Plan Environmental Impact Statement
BPA	Bonneville Power Administration
C_2F_6	Carbon hexaflouride
CBO	Congressional Budget Office
CE	Emergency capacity
CEC	California Energy Commission
CEO	Chief Executive Officer
CEQ	Council on Environmental Quality
CF_4	Carbon tetrafluoride
cfs	Cubic feet per second
CH_4	Methane
Clean Water Act	Federal Water Pollution Control Act
CO	Carbon monoxide
CO_2	Carbon dioxide
COE	U. S. Army Corps of Engineers
Council	Pacific Northwest Power Planning Council
CSP	Customer Service Policy
CT	Combustion turbine
DC	Direct current
DFOP	Detailed Fishery Operating Plan
DOE	Department of Energy
DSI	Direct service industry
DSM	Demand-side management
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMF	Electric and magnetic fields
Entitlement	Canadian Entitlement
EPA	Environmental Protection Agency
EPA-92	Energy Policy Act of 1992
EPRI	Electric Power Research Institute
ESA	Endangered Species Act
ET	Energy Transmission
F&W	Fish and wildlife
F&W Program	Northwest Power Planning Council's Fish and Wildlife Program
FAA	Federal Aviation Administration
FBS	Federal Base System
FCRPS	Federal Columbia River Power System
FCRTS	Federal Columbia River Transmission System
FELCC	Firm energy load carrying capability

FERC	Federal Energy Regulatory Commission
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
Flows EIS	Columbia River Salmon Flows Measures Optional Analysis Environmental Impact Statement
FPT	Formula Power Transmission (rate)
FY	Fiscal Year
ha	Hectare
HAP	Hazardous air pollutant
HLH	Heavy load hour
IAQ	Indoor Air Quality
ID	Irrigation Discount
IOUs	Investor-owned utilities
IP	Industrial Firm Power rate
IPP	Independent power producer
IR	Integration of Resources (wheeling) rate
IRE	Industrial Replacement Energy
ISAAC	Integrated System for Analysis of Acquisitions
ISW	Inland Southwest
kcfs	Thousand cubic feet-per-second
km	Kilometer (1,000 meters)
kV	Kilovolt (1,000 volts)
kW	Kilowatt (1,000 watts)
kWh	Kilowatt-hour
LDD	Low-Density Discount
LTIAP	Long-Term Intertie Access Policy
m^3	Cubic meters
MAF	Million acre feet
Marketing Plan	BPA Strategic Marketing Plan
MMBtu	Million British thermal units
MT	Market Transmission
MVA	Megavolt-ampere
MW	Megawatt
N_2O	Nitrous oxide
NEPA	National Environmental Policy Act
NESC	National Electrical Safety Code
NF	Nonfirm Energy rate
NFP	Non-Federal participation
NMFS	National Marine Fisheries Service
NMFS	National Marine Fisheries Service
NO_2	Nitrogen dioxide
NOPR	Notice of Proposed Rulemaking
Northwest Power Act	Pacific Northwest Electric Power Planning and Conservation Act
NO_x	Nitrogen oxide
NR	New Resource Firm Power rate
NTSA	Non-Treaty Storage Agreement
NWPP	Northwest Power Pool
O&M	Operations and Maintenance
OM&R	Operations, Maintenance, and Replacement

ORU	Orange & Rockland Utilities
OY	Operating Year
PAH	polycyclic aromatic hydrocarbons
PAM	Carcinogenic polycyclic aromatic hydrocarbons
PAN	Peroxyacetyl nitrate
PAR	Peak-activated rate
Pb	Lead
PBN	Peroxybenzoyl nitrate
Pepco	Potomac Electric Power Company
PF	Priority Firm Power
PG&E	Pacific Gas and Electric Company
Plan	Regional Electric Power and Conservation Plan
PM-10	Particulate matter of 10 microns or less
PNCA	Pacific Northwest Coordination Agreement
PNCA	Pacific Northwest Coordination Agreement
PNW	Pacific Northwest
POD	Point of delivery
Power Plan	Northwest Power Plan
PS	Power Shortage rate
PSW	Pacific Southwest
PURPA	Public Utilities Regulatory Policy Act
QF	Qualifying Facility
R&D	Research and development
RCP	Resource Contingency Program
RD&D	Research, development, and demonstration
ROD	Record of Decision
ROW	Right-of-way
RP	Reserve Power rate; also Resource Program
RPSA	Residential Purchase and Sale Agreement
RPSM	Resource Policy Screening Model
RSEP	Resource Supply Expansion Program
RSEP	Resource Supply Expansion Program
RTG	Regional Transmission Group
SAM	System Analysis Model
SCE	Southern California Edison
SDG&E	San Diego Gas and Electric Company
SI	Special Industrial rate
SO_2	Sulfur dioxide
SOR	System Operation Review
SOS	System Operating Strategy
SO_X	Sulfur oxides
SP	Surplus Firm Power rate
SPM	Supply Pricing Model
SS	Share-the-Savings
TOD	Time-of-Day rate
TOU	Time-of-Use rate
Treaty	Columbia River Treaty
TSP	Total suspended particulates

TVA	Tennessee Valley Authority
U.S.	United States of America
UFT	Use-of-Facilities (rate)
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
VI	Variable Industrial (rate)
WNP-2	Washington Nuclear Plant No. 2
WPPSS	Washington Public Power Supply System
WSCC	Western Systems Coordinating Council
WWP	Washington Water Power